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**Egg Drop Lab: Pre-Drop Analysis**

Materials

* Straws
* Tape
* Rubber gloves
* Twisty ties
* Rubber bands

Analysis

**Straws:** Our craft will be made out of straws. It will be in the shape of a cube. Straws are supportive, yet flexible. Upon impact, they will bend and conform, but not snap. This increases the time of impact, so that a smaller amount of force will be applied over a longer period of time. The impulse and momentum of the craft will be controlled through the flexibility and strength of the straws used to create our contraption. The cube of straws will be made in a way so that there is a lid made out of straws. This lid will be taken off to place the egg in the craft, and then replaced to close the cube.

**Tape:** We will use the tape to attach the straws together. This will also increase the strength of our skeleton craft of straws.

**Rubber Gloves:** Rubber gloves are elastic, so when stretched and released, they will return to their previous state. We will make a cradle out of rubber gloves and place the egg inside. After making a cradle out of stretched rubber gloves, we will stretch the gloves and attach them to the inside corners of our cube. There will be equal force on all sides of the egg, thus resulting in no net force. The elasticity and strength of the latex material will prevent the egg from bouncing around or hitting the sides of the craft. There is a large amount of potential energy in the stretched gloves, so if they break, it could be extremely harmful to our egg because the creation of kinetic energy could send our egg out of the craft. The inertia of the egg will hopefully be controlled by the elasticity of the rubber gloves. When the egg continues to accelerate downwards after the outside of the craft has hit the ground, the rubber gloves will absorb the momentum and make sure the egg bounces back up.

**Twisty Ties:** We will use twisty ties to attach the lid (one side of a six-sided cube). The ties can be easily wrapped around groups of straws.

**Rubber Bands:** To prevent the egg from slipping out of its cradle, we will secure it with rubber bands. By adding rubber bands around the gloves, the egg will be closed into its cradle and will not move within its cradle.